

Listing of the Claims:

The following is a complete listing of all the claims in the application, with an indication of the status of each:

1 Claims 1-11. Canceled

1 12. (Currently Amended) A sensor, comprising:

2 a transmitting antenna array ~~which transmits radiation signals in~~
3 ~~both a~~ having radiation lobes in each of main radiation area and a
4 secondary radiation area, where the main radiation area and secondary
5 radiation area are angularly offset relative to each other; and

6 a receiving antenna array ~~which receives reception signals from~~
7 ~~both having reception lobes in each of~~ said main radiation area and said
8 secondary radiation area, said reception signals being reflected from
9 objects ~~which may be~~ present in ~~either~~ said main reception area ~~or and~~ said
10 secondary reception area, wherein said receiving antenna array and said
11 transmitting antenna array are positioned in a same location,

12 wherein objects present in ~~either~~ said main radiation area ~~or and~~
13 objects present said secondary radiation area are sensed by said sensor.

1 13. (Currently Amended) The sensor of claim 12 wherein said
2 transmitting antenna array is forms a single squinting antenna.

1 14. (Previously Presented) The sensor of claim 12 wherein said receiving
2 antenna array is a single antenna.

1 15. (Previously Presented) The sensor of claim 12 wherein said receiving
2 antenna array includes at least two antennas one of which receives
3 reception signals from said main radiation area, and the other of which
4 receives signals from the secondary reception area.

1 16. (Previously Presented) The sensor of claim 12 wherein said radiation

2 signals transmitted by said transmitting antenna array in said main
3 radiation area cover an area at least four times as large as said secondary
4 radiation area.

1 17. (Previously Presented) The sensor of claim 12 wherein said main
2 radiation area is located behind a car and wherein said secondary radiation
3 area is located beside said car.

1 18. (Currently Amended). A sensor, comprising:

2 a planar transmitting antenna including a transmitting antenna array
3 which has a plane surface in which antenna pads of said transmitting
4 antenna array are located so as to establish an irradiation surface and which
5 transmits radiation signals in both having radiation lobes in each of a main
6 radiation area and a second secondary radiation area, where the main
7 radiation are area and second secondary radiation area are angularly offset
8 relative to each other;

9 a receiving antenna array ~~which receives reception signals from~~
10 both having reception lobes in each of said main radiation area and said
11 second secondary radiation area, said reception signals being reflected
12 from objects which may be present in either said main radiation area or
13 said second secondary radiation area; and

14 a control means for tuning the transmitting array, wherein the
15 transmitting antenna array is tuned through said control means so as to
16 direct the main radiation area to an acute angle related to a perpendicular
17 of said irradiation surface, thereby enhancing said second secondary
18 radiation area, and wherein objects present in either said main radiation
19 area or said second secondary radiation are area sensed by said sensor.

1 19. (Currently Amended) The sensor of claim 18 wherein said main
2 radiation area has a central axis and the second secondary radiation area
3 has a central axis, and wherein between the two central axes an angle of
4 [[>]] greater than 45° is included.

1 20. (Previously Presented) The sensor of claim 19 wherein the angle is 90°
2 or above.

1 21. (Previously Presented) The sensor of claim 18 wherein the acute angle
2 is approximately 20°.

1 22. (Currently Amended) An object detection system for a vehicle,
2 comprising:

3 a sensor positioned at a front or rear of a vehicle for detecting
4 objects located in front of or behind said vehicle and to at least one side of
5 said vehicle, said sensor including

6 a planar transmitting antenna including a transmitting
7 antenna array which has a plane surface in which antenna pads of said
8 transmitting antenna array are located so as to establish an irradiation
9 surface and ~~which transmits radiation signals in both having radiation~~
10 lobes in each of a main radiation area and a ~~second~~ secondary radiation
11 area, where the main radiation are and ~~second~~ secondary radiation area are
12 angularly offset relative to each other;

13 a receiving antenna array which ~~receives reception signals~~
14 from ~~both~~ said having reception lobes in each of main radiation area and
15 said ~~second~~ secondary radiation area, said reception signals being
16 reflected from objects which may be present in either said main radiation
17 area or said ~~second~~ secondary radiation area; and

18 a control means for tuning the transmitting array, wherein
19 the transmitting antenna array is tuned through said control means so as to
20 direct the main radiation area to an acute angle related to a perpendicular
21 of said irradiation surface, thereby enhancing said ~~second~~ secondary
22 radiation area, and wherein objects present in either said main radiation
23 area or said ~~second~~ secondary radiation ~~are area~~ sensed by said sensor,
24 and

25 wherein said sensor is mounted on said vehicle so that the acute
26 angle of the main radiation area is compensated with respect to a

27 longitudinal axis passing through a front and a rear of said vehicle.

1 23. (Currently Amended) The object detection system of claim 22 wherein
2 said main radiation area has a central axis and the ~~second~~ secondary
3 radiation area has a central axis, and wherein between the two central axes
4 an angle of [[>]] greater than 45° is included.

1 24. (Previously Presented) The object detection system of claim 23
2 wherein the angle is 90° or above.

1 25. (Previously Presented) The object detection system of claim 18
2 wherein the acute angle is approximately 20°.